

Patent claims

1. Device for the continuous testing of at least two building blocks, characterized in that the device comprises at least the following constituent parts:
 - 5 (i) at least one spatially stationary component with at least one means for supply;
 - (ii) at least one spatially non-stationary component;
 - (iii) at least one unit for the uptake of a building block;whereby the position of at least one building block relative to the at least one other building block changes during the testing.
 - 10 2. Device as claimed in claim 1, characterized in that during the testing the geometry of the reaction space changes, whereby the reaction space is a combination of at least one unit for uptake with at least one other constituent part of the device of the invention.
 - 15 3. Device according to claim 1 or 2, characterized in that during the testing a property change of at least one building block is induced, whereby said property change can be of chemical, physical or physical-chemical nature.
 - 20 4. Device according to at least one of the preceding claims, characterized in that it contains at least one other means selected from the following group:
 - (i) means for the analysis of at least one performance property;
 - (ii) means for the storing of at least two building blocks;
 - (iii) means for the selection of at least one building block;
 - (iv) means for the recording and analyzing of data;
 - (v) means for the transport of at least one building block;
 - (vi) means for the classification of at least one building block;
 - (vii) means for the mounting;
 - (viii) means for the power transmission;

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- (ix) means for the drive;
- (x) means for the adjustment of parameters P;
- (xi) means for the removal of subsequent products or by-products;
- 5 (xii) means for the fluidic sealing;

whereby at least two of said means can be applied in arbitrary permutation and repetition or permutation or repetition.

5. Device according to claim 4, characterized in that the at least one means for analysis is selected from the following group comprising: infrared thermography, mass spectroscopy, chromatographic techniques like GC, LC, HPLC, micro-GC; rapid-GC, dispersive FTIR-spectroscopy, micro-wave-spectroscopy, Raman-spectroscopy, NIR, UV, UV-VIS, NMR, ESR, GC-MS, infrared-thermography/Raman-spectroscopy, infrared-thermography/dispersive FTIR-spectroscopy, color detection with chemical indicator/MS, color detection with chemical indicator/GCMS, color detection with chemical indicator/dispersive FTIR spectroscopy, photo acoustic analysis, electronic or electrochemical sensors as well as tomographic NMR-, ESR-methods, as well as any combinations of at least two 10 of the before-mentioned means for analysis.
15. Device according to at least one of the preceding claims, characterized in that the non-stationary component is a unit, which can be shifted along a space axis or is a body, which can be rotated around an axis, or a combination of both.
20. Device according to at least one of the preceding claims, characterized in that at least one building block is a body, whose maximum radius, measured from the geometric balance point of said body, is between 1 mm and 25 20 cm.

8. Device according to at least one of the preceding claims, characterized in that at least one building block is a substantially ball-shaped body with a diameter of from 100 µm to 2 cm.
- 5 9. Device according to at least one of the preceding claims, characterized in that at least one of the following elements: restrictor, that means pressure loss element or pressure equidistributor, membrane, connecting piece, sealing unit is (i) in the unit for the uptake or (ii) in a means for supply or (iii) in a reaction space or in any combination of (i) to (iii).
- 10 10. Device according to at least one of the preceding claims, characterized in that the building block in the unit for uptake or the unit for uptake is positioned for the interaction with at least one means for supply in a manner that a fluid either overflows, flows around and/or flows against said building block horizontally or vertically.
- 15 11. Device according to at least one of the preceding claims, characterized in that the transport or the selection of a building block or the transport and the selection of a building block takes place according to at least one method selected from the following group: pneumatic transport methods, inclusive applying overpressure or vacuum, mechanic moving, moving by means of mechanic elements, optical forceps, sound fields, electrostatic methods, magnetic methods, piezo-elements, gravitation.
- 20 12. Device according to claim 11, characterized in that the mechanic elements are selected from the following group comprising: wheels, combs, conveyer belts, screws, "revolving doors", pickers, pincers, metering devices.
- 25 13. Device according to at least one of the preceding claims, characterized in that as at least one building block a container is applied, which contains at least one powdery material.
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14. Device according to claim 13, characterized in that the container has at least one of the following features: (i) the container is provided with a coding, (ii) the container is provided with at least one membrane or at least one frit, (iii) the container is sealable, (iv) the powder has been generated within the container.

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15. Device according to at least one of the preceding claims, characterized in that the non-stationary component is moved in a manner that it moves in specific intervals with constant rate, while it rests in other specific intervals.

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16. Device according to at least one of the preceding claims, characterized in that the means for supply consist of ducts with polyhedral resp. circular cross section area, whereby the cross section area can change along the length of a duct, for example can be tapered or it can remain the same.

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17. Device according to at least one of the preceding claims, characterized in that the means for supply can serve for the supply as well as for the removal of (i) fluids, (ii) building blocks, (iii) radiation, as well as elements for the pressure control, meaning pressure reducer, or in case of a plurality of units for the uptake of a building block, which are linked together, also as pressure (equi)distributor.

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18. Device according to at least one of the preceding claims, characterized in that it has at least one means for the fluidic sealing at at least one position between a stationary and a non-stationary component, and that said means for fluidic sealing is selected from the following group comprising: pressing of polished or otherwise treated surfaces, in particular of metal surfaces, the use of seals, seal rings, in particular of O-rings, metal rings, graphite, lubricants, teflon.

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19. Device according to at least one of the preceding claims, characterized in that at least two of said devices are arranged parallelly or serially or parallelly and serially.
- 5 20. Use of a device according to at least one of the preceding claims in the high-throughput materials research, in particular in the catalyst research.
- 10 21. Catalyst comprising at least vanadium, obtained by the use of a device according to at least one of the claims 1 to 20.
- 15 22. Device for the continuous conditioning and manufacture or continuous conditioning or manufacture of building blocks, comprising at least:
 - (i) at least one spatially stationary component with at least one means for supply;
 - (ii) at least one unit for the uptake of a building block;
 - (iii) at least one spatially non-stationary component;whereby the position of at least one building block relative to the at least one other building block changes during the continuous manufacturing and/or conditioning.
- 20 23. Device for the selection of at least one building block from a set of at least two building blocks, characterized in that (i) the building blocks are in a means for storing, which (ii) can be linked with a means for the uptake by means of a movable bar, whereby (iii) the bar can be moved forward by means of a means for drive in a manner that (iv) the building block in the unit for uptake is linked with two means for supply, whereby (v) the one means for supply transports the building block into the other means for supply by means of a fluid flow, which is caused by a pressure difference, and (vi) said other means for supply is linked to a device according to one of the preceding claims.
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